

# SC4072-002

## 4-Cell Series Lithium-Ion Protection Circuit

Revised 10/17/02

**Description:** Four cells in series safety circuit. This module will protect a lithium battery pack against overvoltage, undervoltage, overcurrent and external short circuit conditions.

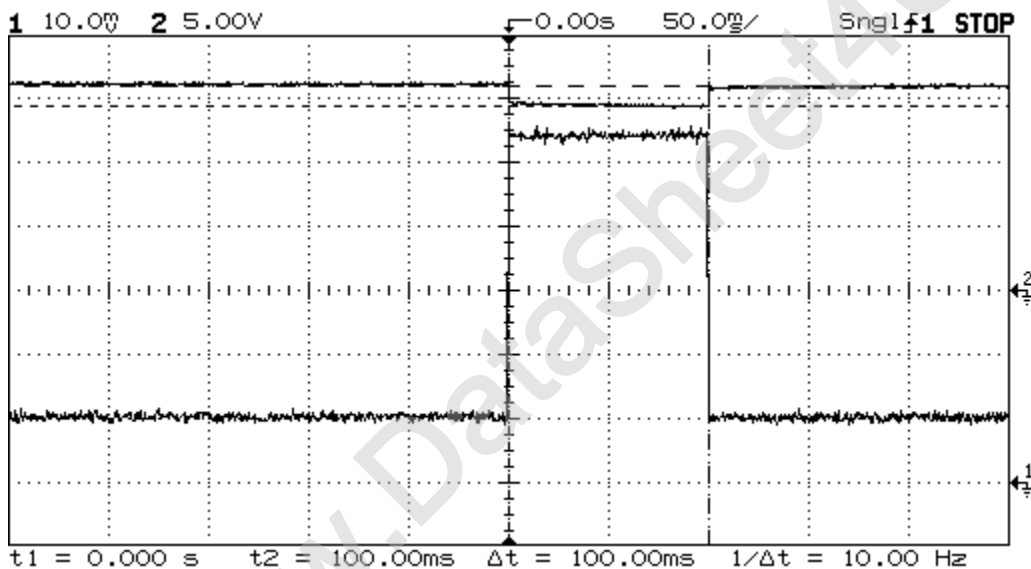
### Technical Specification:

#### Temperature:

Operating Temperature: 0 to 50°C

Storage Temperature: -40 to +125°C

**Pulse current = 5.4A for less than 100 mS at 25 ° C**



#### Board Specification:

Dimension = 8.0 X 30 X 2.6 (mm)

Composition: FR-4

Double Sided, 1 oz Copper

#### PADS Designations

P4 = Battery 1 (+)

P3 = Battery 1 (-), Battery 2 (+)

P2 = Battery 2 (-), Battery 3 (+)

P1 = Battery 3 (-), Battery 4 (+)

P5 = Thermistor output (factory option)

Battery 4 (-) = Batt (-)

Batt (+) connects to Load High

Batt (-) connects to Load Low

#### Disclaimer:

Operating conditions are guaranteed as specified.

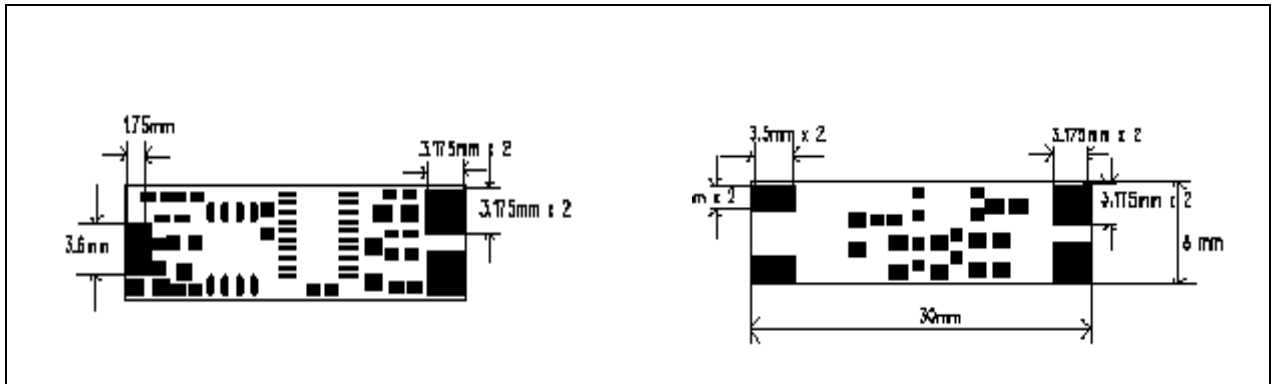
ICC will not be held responsible when used outside of the recommended parameters / applications.

Avoid excessive heat when soldering to the PCB.

Product is tested 100% at the factory. As with all good manufacturing practices, we also recommend 100% testing in the end product.

Questions should be directed to ICC Technical Staff

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### Electrical Specifications at Ta = 25 C (per cell)

	Parameter	Conditions	Min	Typical	Max	Units
Voltage (per cell)	Overcharge Detection Voltage		4.325	4.350	4.375	V
	Overcharge Detection Recovery		4.1	4.15	4.2	V
	Overdischarge Detection Voltage		2.2	2.3	2.4	V
	Overdischarge detection recovery		2.9	3.0	3.1	V
	Operating Voltage		1.8		24	V
	Maximum Open Circuit Voltage	Vcell > 4.35V			24	V
Current	Current Consumption	2.0 < Vcell < 4.35		27	50	uA
	Supply Current (Over charge)	Vcell > 4.35		55	110	uA
	Supply Current (Over discharge)	Vcell < 2.0		2	4	uA
	Discharge Current Limit	2.0 < Vcell < 4.35			3.3	A
Resistance	Nominal FET resistance			36	51	mΩ
Time	Overcharge dead time		0.5	1	1.5	second
	Overdischarge dead time		0.5	1	1.5	second
	Overcurrent dead time		5	10	15	msec

### Typical Applications

- Laptop battery packs
- Power tool battery packs
- Other portable power applications

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